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ABSTRACT

Nine papers focusing on the future of the Internet in schools and the role of teacher librarians include: "The Internet and TL's Role in the School: A Point of View" (Karen Bonnano); "The Internet Challenge: Using Technology in Context To Meet Educational Goals" (Michael B. Eisenberg); "Fire and Sparks: Evolutionary Qualities" (David Hamilton); "Teacher Librarians: The Best of Times the Worst of Times" (James Henri); "Revisioning the Role of the TL" (Sandra Hughes); "The Internet and the TL's Role in the School: A Point of View" (Sandra Naude); "The Internet & TL's Role in the School: Possible, Probable & Preferred Futures" (Pru Mitchell); "Some Beginning Ideas" (Pat Taylor); and "Future Information Professionals: A Person for All Seasons" (Arthur Winzenried). (AEF)

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TOPIC D

THE INTERNET AND TL'S ROLE IN THE SCHOOL:

POSSIBLE, PROBABLE AND PREFERRED FUTURES

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THE INTERNET AND TL'S ROLE IN THE SCHOOL: A POINT OF VIEW

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1995 was the year of Windows 95, 1996 is shaping up to be the year of the Internet. The media hype attached to advertising the advent of the Internet has been running thick and fast and hype is exactly what it is. Teacher librarians need to BE AWARE and BEWARE in determining their future role. Integrating new technology needs to be a gradual process.

There are two major factors to be considered. Firstly, there needs to be a strong interest and a commitment to the new technology and its potential for integration into the curriculum. Secondly, there needs to be an adequate and sustainable funding allocation.

Trends in information technology usage are on the increase in the home. It has been predicted that by the year 2000, 90% of homes will have access to a workstation that provides CD-ROM and Internet use. This leads to a substantial increase in global connections for our students. Barry McIntyre (1996) espouses the importance of a comprehensive IT plan for the school. Things to be considered are accessibility, training and development, implementation, curriculum integration. An information system strategy should focus on what the school is doing, what it hopes to achieve, where it is coming from, how the school will approach it, how IT will be managed and how the school will normalise it (McIntyre, 1996). The world of the Internet is not a panacea but a communication and information tool.

Change in the IT world is occurring at a rapid rate and across all sectors of society. It is opening up a range of challenges for teacher librarians to get a handle on the processes. Thinking and planning for 'virtual' organisation and access will be paramount. Our curriculum programs are moving strongly towards student performance outcomes and teacher librarians need to be proactive in the linking of information networks/technology to support the instructional process within the curriculum design.

In summary -

Possible Futures
- interactive, multimedia delivery of individualised curriculum programs
- high powered effective information retrieval
- electronic publishing in multimedia format.

Probable Futures
- 2nd fiddle to IT staff in the school
- collaborative approach maybe with division of labour (communication/ technology/information)
- facilitators and trainers
- lots of time taken to 'play' to develop competence and confidence to be comfortable with the technology.

Preferred Futures
- leadership - big picture outlook incorporating curriculum design and integration of information services
- collaborative partnerships - electronic integration in a 'virtual' world
- integrated curriculum - requires an organisational transformation at the school level
- information capabilities amalgamated with communication capabilities
- effective information access and retrieval
- global learning
- teacher librarian as facilitator/navigator and trainer (application and opportunities)
- integration of information literacy and technological competency across the curriculum.

Curriculum organisation will need to focus on the changes afoot in how the curriculum will be delivered. Additionally, curriculum development is moving towards a student-centred, inquiry-based approach to instruction coupled with cooperative learning and critical thinking and problem-solving. Also, school organisation will need to change dramatically in light of the link with the Internet to facilitate global learning.

The role of the teacher librarian has the potential to change significantly over the next five years. To embrace these changes teacher librarians will need to develop a vision for the future delivery of information services within their school environment. They will need to prioritise the demands and duties to reflect the direction of the school, but also may need to be a catalyst for change.

REFERENCES

McIntyre, Barry. (1996). 'The information network: integrating electronic information into the curriculum.' (Unpublished paper). *Management strategies: navigating new technologies*, School Library Association of Victoria conference, Bendigo, 24 May 1996.

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THE INTERNET CHALLENGE: USING TECHNOLOGY IN CONTEXT TO MEET EDUCATIONAL GOALS

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Picture the following:

Slick salesman-type person, broad smile on his face, open arms, extolling, 'Technology is the answer, of course. Now what was the question?'

Technology for technology's sake. This is a common lament in schools and education circles. And we aren't alone in this. Businesses and government agencies also suffer from the same problem: technology being touted as a saviour and end in itself, the answer to our prayers. In many situations, technology is being implemented out of context. And, if that wasn't enough, now we have the same situation in relation to the Internet:

Slick salesman-type person, broad smile on his face, open arms, extolling, 'The Internet is the answer, of course. Now what was the question?'

Clearly, we must turn this around. The focus needs to be on THE QUESTION - what do we want to accomplish in schools? And how can we use the Internet and other technologies in effective and efficient ways to reach our goals?

THE INTERNET CHALLENGE

School library programs and teacher librarians face exactly the same challenge: to use technology in general and the Internet specifically as a means to an end and not as an end in itself. Let's call this the 'Internet Challenge' -- to use the Internet in meaningful ways to help achieve educational goals.

This Internet Challenge provides two tremendous opportunities for teacher librarians. First, teacher librarians are in an excellent position to meet this challenge within the library program itself. Teacher librarians can focus on central library functions of information services and information skills instruction and using the Internet meaningfully to meet those goals. Second, and even more importantly, teacher librarians can play a key role in helping the entire school to meet the Internet Challenge. Teacher librarians' experience with curriculum-focused information services and integrated information skills instruction places them in a direct and unique position to help classroom teachers integrate the Internet into everyday learning and teaching.

Meeting the Internet Challenge means continually focusing on the fundamentals of vision and purpose of the library program. The mission statement from *Information Power* provides an energetic and essential vision for library programs: 'the mission of the library media program is to ensure that students...are effective users of ideas and information' (AASL/AECT 1988). In an information society, there is no mission more important. Teacher librarians can accomplish this vital mission by providing essential information services including access to collections, help, referral, reading guidance and teaching essential information literacy skills as a full process, not just location and by access to resources.

In terms of technology and the Internet, it's not 'the library' and 'technology,' it's the LIBRARY including all information systems and resources used for learning and teaching. Students and teachers shouldn't think about the search for information in terms of using 'the library' and then 'the Internet,' we want them to think about using the LIBRARY including the Internet. Today and in the future, the concept of LIBRARY should encompass the full range of information resources -- electronic, full-text, print, networked, stand-alone -- whether accessed through the school's local

area network or Intranet, a central physical place called the library media center, or the global Internet.

While this concept of a unified LIBRARY is not a new one, there is a tendency to lose sight of it among the emerging information systems and the ever-changing technological environment. In addition, our own library systems sometimes work against the unified concept. For example, rather than a common access point and interface to **all** electronic resources, many libraries still have an online catalog (OPAC) separate from the periodical indexes and full-text resources and separate again from access to the Internet. Furthermore, in most cases, these various electronic resources are only available in the physical library center.

A unified LIBRARY system doesn't necessarily require a common search system across all resources (although that might be nice), it 'simply' requires that the LIBRARY system encompass easy intellectual and physical access to **all** resources and networks that we would include under the concept of LIBRARY. A unified LIBRARY system permeates the entire school and includes the full range of information resources available to students and teachers. Commercial library systems need to foster and encourage the LIBRARY concept by providing mechanisms for combining local and global systems along with site licensing agreements that allow us to offer LIBRARY on every workstation in the school and community.

When teacher librarians meet the Internet Challenge, they move to fulfill the concept of LIBRARY. Using the Internet in context addresses the needs of the library program and the entire school. LIBRARY is more than just resources and technology. LIBRARY means a full program of information services and information literacy skills instruction. In terms of the Internet, LIBRARY means teacher librarians using the Internet within information services and as part of information literacy skills instruction to ensure that students are effective users of information.

The remainder of this paper offers a discussion and examples of how teacher librarians can meet the Internet Challenge and fulfill the vision of LIBRARY within each of these two functions -- information services and information literacy skills instruction.

INFORMATION SERVICES

Information services refer to the full range of services and activities available to students, teachers, administrators, and the community. Information services include (Eisenberg and Berkowitz 1988: 87-98):

- resources provision
- reading guidance
- direct information
- curriculum consultation
- curriculum development.

Resources provision service refers to providing space, materials, and equipment to meet curricular and personal needs. Meeting the Internet Challenge (using the Internet in meaningful ways) for resources provision includes providing tools that help students and teachers to link Internet resources to curriculum needs, providing workstations and connections to the Internet, and sharing resources and building cooperative collections across regions.

Reading guidance service focuses on promoting literacy and guiding students and teachers in reading and materials selection. Meeting the Internet Challenge for reading guidance includes identifying and arranging for teachers and students to become involved in special collaborative Internet projects (eg. *Live from Antarctica, MayaQuest*) and providing opportunities to interact with others globally through email and discussion groups.

Direct information service involves providing assistance in locating and retrieving information or direct information as required. Meeting the Internet Challenge for direct information service

includes providing students, teachers, and others direct help, referral, and question-answering service to put them in touch with the specific information they need.

Curriculum consultation service relates to providing advice on the use of information, resources, and technology in curriculum. Meeting the Internet Challenge for curriculum consultation includes using email and electronic discussion groups to communicate with teachers and help teachers communicate with each other (locally and globally) on curriculum-related matters, professional issues, and decisions.

Curriculum development service refers to collaborating on the design, development, and evaluation of curriculum, particularly those units and lessons integrating information skills instruction. Meeting the Internet Challenge for curriculum development includes joint efforts to link curriculum and assignments and the plethora of resources, projects, and services available through the Internet, and also to identify and develop relevant Internet-based curriculum projects.

Clearly, the Internet can be used in a range of ways that improve information services. The key is to focus first on the services and users' needs and then consider the Internet in context.

INFORMATION LITERACY SKILLS INSTRUCTION

Information literacy skills instruction offers another powerful opportunity to meet the Internet Challenge and fulfill the concept of LIBRARY. Over the past 20 years, library media professionals have worked hard to move from teaching isolated 'library skills' to teaching integrated information skills. Here too, the key word is 'context', and effective integration of information skills requires two contexts:

1. the skills must directly relate to the content area curriculum and assignments or students' own needs, and

2. the skills themselves need to be tied together in a logical and systematic information process model.

Meeting the Internet Challenge requires teacher librarians to focus on both of these contexts.

The first context is real student need -- in curriculum, personal life, or work. While it is certainly possible to learn skills in isolation, practice and research confirm that people learn best when the use and purpose are clear. Students can probably learn to communicate via email or to access a WWW site, but they will eagerly engage and internalize these skills if they see how they directly relate to their school assignments, personal interests, or work requirements. Electronic mail, for example, takes on meaning if students realize that it can help them to work with students from another state or country to complete a project for social studies. Accessing a WWW site is more than a novelty when it relates directly to answering homework questions or provides information for a project or report.

The second, and often overlooked, context is the information problem-solving process itself. Computer and telecommunications technologies are supposed to extend our abilities to solve problems. That sounds fine in the abstract, but what does it really mean? Practice and research tell us that when people understand how specific skills fit into an overall model or process, the power and usefulness of the specific skills are expanded. Yes, students recognize the value of using email for communication, but this takes on new meaning when they realize that email can help them to better define the task of an assignment by being able to interact with teachers and group members. Task definition is step one of Eisenberg and Berkowitz' Big Six information problem-solving model (Eisenberg & Berkowitz 1990).

Chart 1 offers examples of how Internet capabilities can be placed in the Big Six information problem-solving context. The chart is easily modified as new Internet functions and resources are made available or as teachers and students find new ways to apply existing capabilities. The power of the Big Six model is in its ability to provide an adaptable context for learning and teaching

Internet skills -- in fact, for learning and teaching any electronic networking or information technology skills. (For a more detailed discussion of computer skills for information problem-solving see Eisenberg and Johnson, 1996).

Chart 1: Internet Applications in a Big Six Context

Big Six Skills	Internet Applications
Task Definition	email, listservs, Internet Relay Chat, MOO, CUSeeMe
Information Seeking Strategies	network navigation (WWW, Netscape, Lynx, Gopher), email, listservs
Location & Access	WWW navigation (Netscape) and search tools (Lycos, Webcrawler, Yahoo, Archie, Veronica, etc.)
Use of Information	download, upload, ftp
Synthesis	HTML and WWW page creation
Evaluation	email, listservs, Internet Relay Chat, MOO, CUSeeMe

CONCLUSION

In the rush to use new technology in general and the Internet in particular, the focus has centered primarily on implementing hardware and software and teaching commands and capabilities. Schools and businesses are already investing considerable amounts of money, time, and effort on getting connected to the Internet, but the central question -- how can we use the Internet in meaningful ways to help achieve educational goals -- is often unanswered. Teacher-librarians are in a unique position to meet this Internet Challenge. And if they do so, they not only establish a broad and encompassing concept of LIBRARY, they also go a long way to fulfilling their mission of ensuring that students are effective users of ideas and information.

REFERENCES

AASL/AECT (American Association of School Librarians and Association for Educational Communications and Technology). (1988). *Information Power: Guidelines for School Library Media Programs.* Chicago, IL: American Library Association.

Eisenberg, Michael B. and Johnson, Doug. (1996). 'Computer Skills for Information Problem-Solving: Learning and Teaching Technology in Context', ERIC Digest, EDO-IR-96-04, Syracuse, NY: ERIC Clearinghouse on Information & Technology. Located at **<gopher://ericir.syr.edu:70/00/Clearinghouses/16houses/CIT/IT_Digests/Computer_Skills>**.

Eisenberg, Michael B. and Berkowitz, Robert E. (1988). *Curriculum Initiative: An Agenda and Strategy for School Library Media Programs.* Norwood, NJ: Ablex Publishing.

Eisenberg, Michael B. and Berkowitz, Robert E. (1990). *Information Problem- Solving: The Big Six Skills Approach to Library & Information Skills Instruction.* Norwood, NJ: Ablex Publishing.

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FIRE AND SPARKS: EVOLUTIONARY QUALITIES!

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In my little treatise 'The Evolution of the School Library' published in *Emergency Librarian* in late 1992, I suggested that the changes that lead to the modern school library would eventually take us into a phase that I called 'Creative'. For those of you who may have missed the earlier parts, let me offer this brief review. (A chart outlining this concept has been appended.)

The **Reactive** Library merely responds to the demands of its environment by providing a service that only the librarian fully appreciates. This phase is marked by a tendency to consider the materials to be more important than the people they were assembled to assist. The Card Catalogue and the Annual Inventory were major symbols of its fixation with things. It led, in many schools, to a notion that the computerized catalogue is an ultimate good, and once established will manage nicely without further support. These libraries also have very serious regulations and fines and rules. It is the 'Material Centred Library'.

The **Proactive** Library offers the 'store' approach. It is this service that attempts to sell good things to students usually for their own good. The emphasis is on convincing all the users that there are treasures to be devoured and savoured and they are all free -- assembled for the good of the child and the school. These facilities vigorously boast of their sales (circulation) and their accumulated good works. They like to advertize through displays, leaflets, lists and competitions. The good book and the good video and the good kit are all food for delight and promotion. This is the 'Client or Child Centred Library'.

The School Program drives the **Curriculum** phase. This agency focuses on the school, the teacher and the learning program of the school. The student is merely part of that program. It is pledged to meeting the demands of the instructional program through planning and classroom contact. It is the School Resource Centre and it houses 'learning materials'. It is involved with instructing students to properly use those learning materials to advance their own learning outcomes. It is more concerned with process than with content, helping the life-long learner to acquire the requisite skills to meet the demands of life after school. This is the 'School Centred Library'.

Which brings me to the **Creative** stage that was the ultimate evolutionary stage that the school library could reach. The overstated phases that are suggested above are, of course, all elements of every quality school library program. There are no single stages in this evolution. The Reactive, The Proactive and the Curriculum stages are present in every school library regardless of the extent of its development. It is the Creative that appears to be the most difficult to achieve perhaps because it is the most difficult to define, to establish, to measure and evaluate. The 'Creative, or Human Centred Library' offers me the opportunity to consider the school library, not as a place or a specific tool in the educational establishment, but as an open opportunity for the child to explore the world of ideas through print and pictures, computer databases and now through the incredible world-wide electronic network. This vision projects the library in the school from service station or blip on the electronic information highway into a dynamic learning or information centre. It becomes a school without teachers or formal curricula, without grades or instruction. It is even more relevant today than when I attached the title to it over 5 years ago.

Consider the school as a training ground for students in which they may acquire the skills to fully use the learning centre the library represents. The public library perhaps represents this 'free' learning centre in our society today. It is that institution that we might wish to see as the 'graduate school' of this evolved school library premise. I have been one of those who always challenged the merger of the two libraries citing the apples and oranges dichotomy. Whatever the program emphasis, it is the school library that must be seen as a fundamental prerequisite to a lifelong pursuit of truth. For many people the discovery of the book opens incredible horizons that are closed or obscured to others. I am almost as disheartened when I meet individuals who have come

to believe that the book is dead or in serious decline. There is a sense that quality has left the human condition as we try to come to grips with this new information explosion. We may well be on the edge of a new form of human interaction, one that will in time bring even greater complexity and richness to the human condition. At this point in time it seems that much of the new technology has been directed to an 'easy way out', rather than a move to intensify or enhance the human condition. The media in all its profusion and glitz has made us not more complex, but more shallow. There is a kind of materialism that has moved to replace many of those finer sentiments behind society. We see a decline in the family, in personal integrity (in political life for instance), in the spiritual realm and in relationships of all kinds.

It is impossible for the school to do more than mirror its society. The library in the school has only been provided to provide resources and opportunities for students and teachers related to the objectives of that social order. In recent years the provision of quality resources, both material and human, has suffered as governments moved to the fiscal right. The public library has always had to defend itself against the masses. For it is the great democratic whole that would move to reduce its value. Libraries everywhere suffer harm when the mass is consulted. It is only an enlightened creative few who are willing to take the political and social action on behalf of a minority to see this remarkable institution progress. We are engaged in bitter disputes with the 'right' as they assert the need to defend individual values in a collective order. But seeking the greatest good for the largest groups will surely reduce all of us to lesser levels. While elitist values are always scorned they are responsible for the great museums, universities, art galleries, churches and libraries.

We need to create learning centres in our schools that will offer our children the best of the world. And those 'new' electronic tools that have so much to offer will be part of that complete new library of resources.

These are my original words on the **Creative** phase.. ..

This is the school library as 'learning centre' - a self-directed, multimediated resource opportunity for the self-activated learner. Here was that student we expected would emerge from our curricular model. The creative centre would be the place where information would be assembled as that the learner could investigate and experience as he or she desired. Interactive computer terminals would assist in meeting many needs, while print and other media resources would be available in profusion. This is the library in the 'school-without-walls'. This is the library in the 'school-as-brain' where thinking and creative skills are part of every curriculum. Where the curriculum is as fluid as our imaginations can nurture. Surely this self-education concept was part of the reactive library. Books provide ideas for those willing (and able) to use them. The missing ingredient was the commitment of the school to the 'learner' as an individual capable of directing his own growth. They had to be taught to do that. This personalizing function was ignored and we lost many individuals who were unable to grow in a structured, staged educational factory. The irony is that the creative stage is only an outcome of the 'curricular'. If the school can assist its students to be self-directed, lifelong learners then the library in the school will become only one of that student's learning centres or laboratories along with public libraries, museums, personal contacts and all the other learning opportunities that make life interesting.

It seems to me that the gravest error we have committed is to think that others see teacher librarians as important on our own. We can not be seen to be special or we will be treated specially. And that means separately from the whole construct. If we are a part of the educational process or promise, then we must accept the practical political realities surrounding the educational establishment. It may not be all pure, but we may be able to influence the decision makers to recognize the value of our mission. We seem so caught up in advocacy we fail to understand that advocacy has little influence on those who have no real control over power in the school. The object of our concerns -- the child -- has none. His parents hold somewhat more, especially if they join in political association with others. Teachers seldom make policy except through their unions. The Creative phase will not emerge from teachers, students or dynamic groups of teacher librarians. It can only come from the creative spirit of the individual teacher librarian who recognizes his or her own power and mission and moves to make it work! This is not mere advocacy but sheer gall and guts. This is not cooperative planning but direct action. There is fierce arrogance of purpose here. We have long thought that the program was everything. In fact it is the individuals who drive the thing and

demonstrate through the force of their own convictions (nurtured and strengthened by the electric energy of their colleagues around the world) that learning is an individual pursuit supported by a host of assistants in a myriad of forms. We have tried to pretend that the library in the school does not depend on the personality and drive of the incumbent professional. The 'Creative Library' under any of its names will not evolve unless we are able to staff them with individuals who have fire in their bellies and sparks in their eyes.

REFERENCES

Hamilton, Donald. (1992). 'The evolution of the school library.' *Emergency Librarian*, 20 (2), Nov-Dec 1992: 9-12.

APPENDIX: THE EVOLUTION OF THE SCHOOL LIBRARY

Reactive
- Collection
- Organization
- Control
- Management
- Rules and procedures
- Method
- Cool, efficient
- Material Centred

Proactive
- Orientation
- Library-Based Activities
- Displays
- 'The Great Library'
- Colorful, vibrant, warm
- Child/Adolescent Centred

Curricular
- Curriculum based
- Classroom orientation
- Planning
- Teaching and learning tools
- Student/Teacher Centred

Creative
- Learning Centre
- Discovery
- Individualized Learning
- Personal
- Human Centred

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TEACHER LIBRARIANS: THE BEST OF TIMES AND THE WORST OF TIMES

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In recent times, just as in times past, the minds of many involved in the practice of teacher librarianship reflect upon the future of the profession. Future in terms of role and influence; future in terms of being. Could it be that deep in the soul of every teacher librarian lies a dormant existentialist? In Australia there has been debate about the value of the collaborative practice known as CPT. This debate has been initiated by both practitioners and academics. For some this is a debate about form. For others it is a debate about substance. Lurking is the opinion that non teachers could do the job - the T in TL is not essential, perhaps not needed.

There is an irony in the fact that while some are taking the T out of TL, others in the library community have formed a love affair with the pursuit of information literacy. And this quest is not limited to the information professions. Many other professional groups have taken up the cause. The ability to teach information, not just provide it, has become important.

Society at large is gradually seeing information for what it is. In one sense information is like a tidal wave. People drown in it. In one sense information is like oxygen. Without it people cannot survive. There is this inherent contradiction. The great philosopher Ludwig Wittgenstein suggested that it was irrelevant to talk about the meaning of a word or a sentence. The only important question was how is that word or sentence used. Hence the slogan 'don't ask for the meaning, ask for the use.' It seems to me that Wittgenstein's point applies equally to our concept of information. Don't ask what it is, ask what it is used for. In this sense information only has value to an individual if s/he has learned how to use it. A more radical suggestion is that information is a process not a product at all. That is, information is the process of becoming informed.

If schools are serious about information literacy. If they want to forge a school community where both teachers and students are comfortable and competent in using a wide range of information services and products. They will place a priority on the effective use of teaching and learning methodologies that equip learners with the skills of knowledge construction.

Where teacher and students think about the things that they want to learn, and they are provided with basic information skills, their encounter with information is informing. Becoming informed is a struggle of making sense from inconsistencies and incompleteness. Learning is nothing less than self-understanding: reformulating information for oneself.

To the extent that teaching is about researching for the right answer, it is flawed. Quality teaching is about supporting students in their quest for exploration. Through the processes of becoming informed they mature as researchers who grapple with the adequacy of their information sources and their information skills. Such researchers do not investigate information as if it were a needle in a haystack - the answer is there somewhere, the trick is to locate it. Rather their information pool forms a rich laboratory which provides evidence for personal examination. As teachers and students work together to construct knowledge in this way there is a shared understanding that the process of becoming informed and constructing knowledge involve all of the dynamic processes of thinking, feeling and acting.

There is a lack of information equity among today's schools. Some are characterised by information richness, others by information poverty. Poverty might be reflected by a lack of information resources; equally it may be reflected by a lack of opportunity to explore information through appropriate teaching and learning. The processes of becoming informed are not evident. Since such students have inadequate skills to explore information or construct knowledge they are caught in a time warp.

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Some schools reflect a generational gap in the process of becoming informed. Typically these schools are those where teachers and their teaching is not underpinned by the teacher's information literacy. Such teachers do not see the need or do not have the opportunity to explore information via the new technologies and in particular from the Net. Often the students are more informed than are their teachers: a case of the blind leading those with 20-20 vision.

Resource based learning (RBL) is a powerful methodology that allows and requires students to learn from their own confrontation with information resources. RBL provides the teacher with the opportunity to tailor the learning laboratory (the information resources, the learning activities, the location of those activities and the expected learning outcomes) to the needs, abilities, and current knowledge of each child.

The thesis here is a simple one. When students and teachers are given the opportunity to become information literate they can take control of their own information destinies. When school communities perceive their obligations vis-a-vis information as that of collecting it (rather like keeping money in a bank) they stifle the development of a process based curriculum. To the extent that teachers see information as something that is passed onto students and not as something that one explores, they crush motivation for learning. Such teachers are likely to maximise the place of assessment rather than the place of learning. When school communities perceive their obligation vis-a-vis information as that of use, (of integrating it into school life) then the use of information by teachers and students becomes the very fabric of the process of being informed.

So how does all this come about? Clearly the quality of learning is in large part determined (a) by the learners access to relevant and pertinent information, and (b) by the desire and determination of the school community to foster information literacy.

In our schools it is the teacher librarian who brings knowledge, of both the information resourcing skills and of the information process, into the teaching and learning programs. Likewise it is the teacher librarian who can address the information needs of teachers and school decision makers. Can we imagine an information literate school community without a teacher librarian? Let's suggest that the T in TL is missing. In this scenario the teaching role is absent. This means that the 'TL' would not be an integral part of the instructional design process. Sure the information specialist could resource teaching and learning but s/he could not be involved in the teaching program. If instead the L in TL were missing, then the skills of the information specialist would be absent. We have all seen the results of this situation. Even with the best will in the world a teacher cannot hope to play the role of information specialist.

Typically, teacher librarians in schools are few in number and, therefore, their influence is limited and most likely to be broad based only if they work in partnership with other teachers. Partnership between the teacher and TL provides the opportunity for greater flexibility in the teaching program and provides greater opportunity for teacher-student interaction and engagement. The opportunity for engagement is critical because it provides opportunity for students to address their information uncertainty. If schools are to give more than lip service to the importance of process then they must find ways to involve the TL in the teaching program. The TL is likely to be the school expert in the information process and is therefore in a position to assess student learning in that area.

Can there be any educational rationale for a reduction in the role and influence of such a key player in the information agenda? It is noticeable that principals of good government schools and those in the private sector are apt to 'sell' their schools by promoting the quality of their information services and are likely to have more, rather than fewer, teacher librarians.

There is a strong case to be made in support of increasing resources that support information services in schools. Not only might we argue for more TL positions we should consider the case for a Director of Information Services. Such a person would have school wide responsibility for managing the whole range of IT and traditional information services that have been developed to support teaching and learning. Furthermore this person would develop a schools information policy and manage its corporate information services. Such a position would be additional to the position of TL.

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Arguments about reductions in information services and teacher librarian positions are usually tied to (a) ideological demands for a reduction in public sector funding or (b) a product orientated view of information. Against these unfortunate arguments we must continue to wage an intellectual war because we believe that:

> ...the richness of the school's library resource services will influence and may even determine whether or not teachers and students are empowered to be independent learners both today and for the rest of their lives. Likewise, the offering of quality library resource services will assist schools in the process of addressing issues of social justice and equity in a meaningful way.
>
> (*Learning for the Future* 1993: 4)

I would also argue that it is politically unwise to consider a change in the name of the teacher librarian. In this time of fiscal 'madness' it is essential that the bureaucrats are reminded that 'librarians in schools' are indeed teachers.

Of course such claims assume that the teacher librarian is a fully educated professional who is able to articulate a strong rationale for his/her place in an information literate school community. Nothing less will do.

REFERENCES

Learning for the future: developing information services in Australian schools. (1993). Melbourne: Curriculum Corporation.

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REVISIONING THE ROLE OF THE TL

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Teacher librarians are facing role ambiguity as electronic information transforms society, economics, politics, education and ultimately their work. They have several choices. They can try to ignore the realities and hope that the 'waves of change' (Morgan 1988) will sweep over them. They can recognize the realities, become paralyzed with fear and get swept about by the tides. They can recognize the realities and move quickly to try to understand the change, construct a vision for their future and ride it through the waves of change. In fact, the preferred choice must be to accept the realities and move quickly to construct a vision that can empower teacher librarians to continue enabling learners to become literate in the electronic environment.

Teacher librarians are in the business of literacy, assisting students and teachers to learn how to access, use and communicate information. The information focus is changing with global networking. In order to have some understanding of how to respond to the changes teacher librarians need to have some understanding of where they've come from and where they are going.

Before libraries of any kind existed, people used physical experience and observation for information and communication. They developed oral traditions of storytelling, memorization of important information and listening skills. With the invention of writing, print literacy skills became important and grew, with the printing press, to be the focus of communication. When electronic forms of communication developed they began to take on more and more importance until the computer and networking completed the move to a focus on electronic communication of information.

Students still need the building blocks of the earlier literacies in order to function effectively in the new information and communication environment. In order to begin to build the information skills needed to effectively use the Internet they need to read, write, think, research, view, represent and present. They must be able to use a wide variety of forms of information to match their age, stage of development, learning styles and needs and available resources.

It becomes clear as you work with global networking that its strengths lie in its currency, its global nature, its provision of experts and vast libraries of information, and its ability to connect people for dialogue and problem-solving. What is also clear is that it cannot provide for all information needs. Students will often find that the information they need is more accessible through print or video or experimentation. Real objects, community resources, print, video, CDROM, and the Internet are required for the unique kinds of information, socialization, aesthetics, and convenience each provides. This means that physical school libraries will continue to exist to support resource based learning. However, the new literacy will preoccupy teacher librarians until they understand it better, have universal access, have clarified teaching and learning strategies for it and have gained acceptance in the educational community as transformational leaders for information literacy.

WHERE ARE TEACHER LIBRARIANS NOW?
WHAT ARE THE REALITIES THAT TEACHER LIBRARIANS MUST FACE?

- Equity of physical and intellectual access does not exist. Global networking on the Internet is changing the information environment. Information is being decentralized globally, making 'everywhere anywhere'. This leads to highly information literate and illiterate groups of people, the illiterate losing out on the better paid jobs. The danger to society becomes a polarization of rich and poor with the middle class disappearing.

- Equity of access to the new literacy must become a priority for responsible governments. The role of the teacher librarian is not necessarily recognized as important to the development of

equity of access to this new literacy. The inequity of physical access to computers and ultimately the Internet disenfranchises many students, teachers and teacher librarians.

- The worship of digital information to the exclusion of other types of information creates a danger of illiterates using voice recognition and graphic interfaces, unable to articulate or communicate without the electronic medium.

- The obsession with gaining physical access to electronic information has caused decision-makers to discount or miss the importance of intellectual access.

- The lack of comprehension of the place of Internet use in the information problem-solving process, and the skills , understandings and values required to use it effectively leads to the belief that students can learn how to learn in this environment simply through physical access.

- Teacher librarian training is inadequate in some jurisdictions.

- Training programs for teacher librarians do not always address the total information environment (print, realia, video, CDROM, Internet...).

- The hesitancy of teacher librarians to learn the new technologies and the skills that are needed to access them intellectually and integrate them into programs is slowing down their response to the changing information environment. In a recent book designed to assist teachers with learning about the Internet the authors mentioned teacher librarians in their *Guidelines for Using the World Wide Web in the Classroom* as follows: 'If your librarian knows how to use the Net, he or she may be able to identify quickly some of the best resources for your project.' (Heide 1996).

- Ambiguity creates a tendency towards competition rather than collaboration. The ambiguity of role in the electronic information environment can lead to competition within the school for control of access to electronic information, rather than a collaborative effort, focused on student learning.

- The uncertainty about what information literacy is now, how it should be taught and who should maintain and update the resources and technology can leave these tasks open to the entrepreneurs who can make the best case.

- The networked environment requires transformational change. Teacher librarians can contribute to this process by drawing on knowledge and skills gained in implementing government school library program directives.

- Teacher librarians are in a particularly good position to nurture collaborative working relationships among staff members across the grades and the curriculum by sharing curriculum and instructional understandings with colleagues as they collaboratively plan, teach and evaluate information literacy.

- Teacher librarians can help schools attain equity of intellectual access by working with teachers to help them and their students learn the skills necessary to access and use appropriate resources for information and communicate knowledge ethically and effectively.

- Teacher librarians are naturally expanding their resource manager roles to include professional selection of electronic information. They are selecting appropriate videos, CDROMs, Internet tools, search engines, web sites... to meet school program, teacher and student needs.

- Teacher librarians are developing strategies for information problem solving using the Internet, along with all the other formats of learning resources. They are developing ways to integrate the learning of these skills with program. The *KidsConnect* project sponsored by the AASL and run out of Syracuse, New York is an excellent example of teacher librarians using the global network to help kids solve information problems with the information sources that best suit their needs.

WHERE DO TEACHER LIBRARIANS WANT TO GO?

The realities pose a challenge and an opportunity. Teacher librarians are positioned perfectly to build on their strengths and contribute effectively to the transformational changes in schools. The continuance of the change efforts they are already moving on will make a significant contribution to the resolution of the equity, training and ambiguity issues.

The 'revisioning' of school library directions must take place quickly and must be ongoing, to assure that the modesty we traditionally show about our accomplishments does not undermine us in an era of redistribution of resources towards the electronic environment. Teacher librarians need to create and recreate visions that fit the new realities.

The American School Library Association, the Canadian provincial School Library Associations and the Australian School Library Association have developed excellent visionary documents over the last few years. The American's *Information Power* (1988), Ontario's draft *Information Literacy and Equitable Access* (1995) and Australia's *Learning for the Future: Developing Information Services in Australian Schools* (1993) all work toward constructing a vision for the future for information literacy programs, school libraries, and teacher librarians. There must be, however, a continual 'revisioning' process to keep up with the rapidly changing realities of the electronic environment.

The American School Library Association has recently focused on the most important key to this problem, a clear vision of Information Literacy learning, with *Information Literacy: A Position Paper On Information Problem Solving* (1995). The purpose of the school library is to enable learners to master information problem solving skills. This document defines information problem solving skills, their place in educational restructuring and the role of library resource center program. It provides a vision for schools that focuses first on student learning and how to achieve it in an information environment that includes global networking.

The Ontario School Library Association has focused on the second key to positioning in the networked environment, a clear vision of the role of the teacher librarian and the role of the Library Information Centre, OSLA Draft Position Statement: *The Role of the Teacher Librarian and the School Library Information Centre* (1996). The teacher librarian's role dimensions shift to curriculum development and educational leadership, information technology management and collaborative planning, teaching and evaluating. The content of each of these three dimensions reflects the changing realities by integrating the needs of the electronic environment effectively. This is the kind of 'revisioning' that needs to be ongoing and needs to be advocated.

HOW ARE TEACHER LIBRARIANS GOING TO GET THERE?

Teacher librarians need to do three things to achieve their 'revisions'. They need to lead the way to effective and equitable intellectual access to information within the networked environment through transformational leadership (Hughes & Jackson 1996). They need to clarify their role and support needs to achieve the vision. And they need to market the process and the product within the educational community, particularly to the decision makers. How will we know that they've accomplished their goals?

Teacher librarians will know that they are well on the way to integrating their vision with the broader educational vision when they attain 'critical mass'. By this I mean that they start to get enough people buying into the vision and pushing for it that decision makers catch the vision and integrate it with their vision for educational change. From this they will start to see the problems of equity of intellectual access, resources, support and training being solved. Teacher librarians are rapidly becoming knowledgeable and skilled with the Internet and assisting staff and students to learn to solve information problems with it. Australia has a very active teacher librarian network, OZTL_NET. The US has LM_NET, the BIG SIX, ICONNECT, and KidsConnect. Canada has ATLC Forum and CSLA. In Ontario, teacher librarians dialogue through the Teacher Librarian Conference on the Educational Network ENO. The volume and quality of the dialogue on these and many other listservs/conferences is helping to develop the ongoing 'revision' among those who are connected.

The success of these networks is an indicator of where teacher librarians are along the path to 'critical mass'.

The involvement of teacher librarians within the broader educational networks and networking projects is essential. These networks offer teacher librarians an opportunity to join the dialogue about the future of education, to help build its 'revision' by contributing their vision and their strengths in information literacy learning to the transformational effort. This virtual conference, ITEC Schooling and the Information Highway, is a perfect example of teacher librarians working as part of the learning community to work through the ambiguity and 'revision' for the future.

REFERENCES

American Association of School Libraries. (1995). Information literacy: a position paper on information problem solving. *Emergency Librarian*, 23 (2), Nov-Dec, 1995.

American Association of School Libraries and Association for Educational Communications and Technology. (1988). *Information Power*. Chicago: American Library Association.

Berkowitz, R. (1995). Education for the 21st century: the Big Six skills approach to information literacy. *Impact*, 4 (4), Summer, 1995.

Breivik, P.S. and Senn, S.A. (1994). *Information literacy: educating children for the 21st century*. New York: Scholastic.

Heide, A. and Stilborne, L. (1996). *The teacher's complete and easy guide to the Internet*. Toronto: Trifolium Books Inc.

Hughes, S. and Jackson, B. (1996). The teacher librarian in transformational change. *The Canadian School Executive*, February, 1996.

Learning for the future: developing information services in Australian schools. (1993). Carlton, Vic.: Curriculum Corporation.

McClure, C. (1994). Network literacy: a role for libraries. *Information Technology and Libraries*, June, 1994.

Morgan, G. (1990). *Riding the waves of change*. San Francisco: Jossey-Bass.

Ontario Ministry of Education and Training. (1995). *Information literacy and equitable access: a framework for change*. (A draft document for discussion and response). Toronto: Ontario Ministry of Education and Training.

Ontario School Library Association. (1996). *Draft position statement: the role of the teacher librarian and the school library information centre*. Toronto: Ontario School Library Association.

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THE INTERNET AND THE TL'S ROLE IN THE SCHOOL: A POINT OF VIEW

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The role of teacher librarians with Internet is very similar to the role that they have had with other forms of information such as books, journals and CDROMs. Teacher librarians have to know what information is available; they need to know how to find it; they have to be able to evaluate it; and relate it to the curriculum and the learning processes. They must be able to show staff and students how to find information; assess information and use information correctly. They must provide the best possible opportunity for learning to take place.

In the case of Internet this means library staff must search out useful sites; they must assess these sites in relation to the students and the curriculum. They must provide guides to sites in the form of bookmarks , links on a homepage or produce lists of sites. They must, if necessary, download sites onto the Intranet for use over a weekend, or for speeding up searches during the day. They must ensure a site is available when required, particularly if a lesson or assignment depends on that particular site. This is no different in concept from ensuring that books or journals are available that are crucial to a particular lesson or assignment; or ensuring that a particular CDROM is available and working in the library. Teacher librarians need to be aware of what is available on the Internet. They must inform teachers of email programs or projects running on the Internet that could be incorporated into the curriculum and then assist when these projects are implemented.

Like other sources of information, it is essential that Internet is available in the library and not just in the computer room. By being available in the library this ensures that it is accessible whenever students need it, not just when a class has its weekly lesson in the computer room. This is particularly relevant for libraries that remain open before school, after school and at lunch time, so that students have maximum access to all resources, including the Internet. (Our library is available to students from 7.30am until 10.30pm all week and over the weekend.)

It is important that students and staff see the Internet as merely one source of information to be used alongside books, journals, videos and CDROM. By providing Internet in the library, students can move freely from one format to another and will learn which are the most appropriate sources of information in each circumstance.

Teacher librarians have a responsibility for ensuring that students and staff know about copyright and plagiarism on the Internet and that they can cite information correctly from the Internet.

Students need to develop the skill of handling and managing large quantities of information not conventionally indexed, edited, refereed or authenticated.

Internet is unlike any other form of information in that one is never sure what one has. This adds an entirely new dimension to collection development and evaluation! With books and journals the information does not change overnight. With Internet it is very difficult to know what it is you are providing. You can find an excellent site for an assignment today, but find that it is gone, unavailable or totally updated tomorrow. Data may also have been added making a previous good site totally unsuited for school use.

Teacher librarians are no longer totally in control of their collection. This means an additional responsibility to ensure that sites needed for assignments are checked prior to the assignment and if possible downloaded on a network or stored on a linux box to ensure they remain for the period of the assignment.

This is no difference in concept to ensuring that counter reserve books or journals are available when required. Teacher librarians need to ensure that an appropriate level of security or screening is

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provided that meets the standards required by a particular school community. This might require Internet filters or student contracts.

A major task in the successful introduction of the Internet is publicity and training. Fortunately, our school as a whole has taken the introduction of Internet very seriously and for the past two years, each professional development program at the start of a term has included Internet training run by library staff. At the start of this term, each academic department had a 1 hour session on the Internet, either browsing the web researching sites previously bookmarked by library staff; or having specific instruction on an aspect of Internet such as ftp or e-mail.

We have also run training for parents. Parents showed considerable interest, but some concern over the introduction of the Internet, wondering what their children were missing out on or being subjected to. We ran a session for parents and often assist individual parents when they require it.

Student instruction on the Internet includes both incidental instruction when students are researching assignments as well as specific Internet training. All Year 8s have instruction on the use of the Internet in the first 5 weeks of the school year. This is followed by numerous assignments that require the Internet to be used, in conjunction with all other sources of information. All Year 10's have one lesson a week for a semester of information technology taken by the library staff. This enables us to ensure that students are competent with all formats of information including the Internet. It ensures that students understand some background theory to the Internet; are exposed to Netiquette; given skills in handling vast amounts of information which is inadequately indexed and authenticated; can summarise; notetake and are aware of proper referencing techniques.

Another form of instruction can come through Internet Clubs run by the library. The initial hard work setting up a club soon pays off. Our committee members sort, check and print out email each day. This was particularly valuable when we received 100 plus items daily at one email address, on one terminal for diverse people throughout the school. The Committee assist other students using the Internet in the library at recess and at lunch, and two Year 10 Committee Members created and are now recreating our Home Page.

Staff unfamiliar with the Internet, need to have an incentive to use the Internet and incorporate it into their teaching. The library can play a very valuable role in this by alerting staff to relevant sites and projects that can be incorporated into their curriculum and then by providing assistance when they implement their program.

The Internet adds another facet to the role of the teacher librarian. It does not mean a dramatic change in concept, it merely adds to their role as the major player in the provision of information in the school.

Keeping up with the rapid changes in technology does require a great deal of self-education and self sacrifice. Reading journals; attending conferences; taking additional academic courses; and using services such as the Internet will eat into your spare time. There will never be enough time at work, and I do not think professional development and training can be regarded solely as the employer's responsibility. Teacher librarians must take responsibility for their professional development, otherwise they will be superseded by some other group who will acquire the necessary skills.

With the added responsibility that the rapid development of technology brings to the role of teacher librarian, I think that the Head of Library should at least be a Head of Department, on a par with other departments like Mathematics, English, Science and Social Studies. It is ironic, with all this potential for teacher librarians, to see the continual concern in school library literature about the possibility of losing the position of teacher librarian in the school. The structure of individual positions in the library may change. There will of necessity be a range of staff with different expertise in the library. This staff structure is likely to include teacher librarians, aides, audio-visual technicians, library technicians and computer technicians. However, I still believe they will require a person with library training in-charge. Rather than reducing the need for the skills of a teacher librarian, I think the need for their skills are on an exponential run. With our range of information related skills: from archives, to children's literature, to online data bases, to CDROMs to routers, to

ISDN lines and fibre-optic cables, and our ability to relate this to the whole school curriculum, I do not know how they would cope without us!!!

However, if teacher librarians are not willing to embrace change, particularly technological change, and assimilate this change into the role of a teacher librarian then they cannot complain when their position is taken by someone else. Without the expanded, all embracing information role, teacher librarians will have no legitimate claim to a future position of Information Manager (or Head Teacher, Information Services, or Director of Information Services), responsible for all aspects of information and technology in the school, which if it becomes a reality, would be an ideal promotional position for competent teacher librarians.

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THE INTERNET & TL'S ROLE IN THE SCHOOL: POSSIBLE, PROBABLE & PREFERRED FUTURES

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It is a brave person who would try to predict the future at any time, but to do so when the topic involves the Internet, is more akin to FOOLhardy. Nevertheless, here follows a discussion of the teacher librarian role of the future.

It may be a sign of inherent lack of imagination, or wishful thinking, that my preferred future is one in which the generic role of the teacher librarian undergoes minimal change. According to *Learning for the Future* (1993:43) teacher librarians are responsible for providing 'a responsive and dynamic resource and information service for the school community'. If a technology such as the Internet can invalidate or even threaten this role, then as a profession we have 'lost the plot'. It is possible to consider each point on page 43 of *Learning for the Future* in the light of the Internet, and confidently conclude that this statement will befit the teacher librarian of the future.

Part of this confidence comes from the fact that the institution known as 'the school' has not exhibited many signs thus far of radical structural or educational change. Given the volume of school reform literature of the past three decades, this is probably neither a popular nor preferred view of the future of education. Nevertheless, the formula of class plus teacher plus classroom still applies to most schools, and whether because of entrenchment or inherent effectiveness, it seems set to survive both the Internet and the millennium. There is no reason why the teacher librarian role should not do likewise.

At this stage of its development, the Internet attracts more attention than other formats of information or technology. The fact that we did not get excited about a conference dedicated to video or CDROM when they were new is an indication of some special elements surrounding the Internet. Its potential application in education has been readily recognised, but actualising this potential involves (or will involve) schools in significant preparation. Before addressing issues of content and curriculum application of the Internet, schools are having to address access issues involving hardware, software, networking, and telecommunications. There are parallels with the beginnings of video use in schools. Today most teachers (and all students) are able to put any video tape into any video player, in any classroom and use it (hopefully to enhance learning). As a teacher librarian looking forward to a future where the same can be said of the Internet, here is a list of preferred Internet developments (in no particular order):

- Greater number of access points throughout the school, preferably on the school network
- Personal access/sign ons for staff and students instead of one school address
- More students with Internet access at home
- Affordable Internet access for those in rural areas
- Better reliability in Internet connection
- Increased bandwidth
- More Internet content of relevance to Australian school students and staff (even if it has to be paid for by subscription)
- Greater standardisation and integration of Internet software
- Seamless integration between local computer-based information services, including library management software, and the Internet
- Refined web authoring software
- Simplified audio and video conferencing capabilities
- Wireless technology to increase flexibility and reduce demands for cabling/ building modifications
- Reduced cost of personal electronic organisers with Internet capabilities
- Voice activated applications available for younger students, and physically or learning disabled students.

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Once these issues are resolved, teacher librarians and teachers can re-focus on their primary roles. The following aspects of the teacher librarian's role are taken from *Learning for the Future* (1993:43).

PLANNER:

'Teacher librarians are involved in curriculum planning and school committees.'

Curriculum planning with teachers of the future will involve consideration of Internet resources, from searching, to email to publishing. While continuing to be active participants in the curriculum planning processes of their school, teacher librarians need to be equally involved in school technology and network planning, addressing issues of policy, budgeting, location, access, training, and maintenance. A teacher librarian who keeps an eye on the future, maintains professional reading, and undertakes regular 'visioning' activities can help schools deal with the rapid changes in the area of information management.

TEACHER:

The major role of the teacher librarian is to 'plan, teach, and evaluate cooperatively with teachers to ensure the effective integration of information resources and technologies into student learning.'

It is vital that preoccupation with technology not be allowed to diminish the teacher librarian's primary role. The resources and technologies may change, but the 'learner' remains the focus of the profession. Teacher librarians are also charged with the responsibility of promoting the acquisition of information skills. Work is beginning on inclusion of Internet-specific information skills into existing Information Skills frameworks. Eisenberg and Johnson (1996) is one readily available source. Integrating these skills across the curriculum in a developmental approach will be high on the priority list once Internet access issues have been resolved. Teacher librarians using the Internet have not forgotten their role in promoting reading and literature. Existing school Library web pages abound in literature-related links, and there is potential to breathe new life into future programmes using communication activities with other students (eg. Book raps) and authors.

INFORMATION SPECIALIST:

Teacher librarians provide training and specialist assistance to students and staff using technology and information resources.

In the near future, schools and teacher librarians will have to address training and empowering the second wave of Internet users. These are usually the less technically interested, those less inclined to 'play' or learn by trial and error, and who will resent this machine if it wastes their time. In the past, the step of the Information Process of major concern to school library users was 'Locating', especially in under-resourced collections. Teacher librarians of the future may well despair of their students ever developing sufficient competency in 'Selecting' to deal with the world of the Internet.

SELECTOR OF INFORMATION RESOURCES:

The biggest issue in selection is the fact that the 'collection' as we have known it will broaden dramatically. It will no longer be possible to 'approve' or 'select' every item of information coming into the library. It will also not be necessary to purchase information 'just in case' it might be needed. The range of formats, authors and points of view represented in the collection will be much broader than is possible at present. Increasingly selection will mean filtering, re-packaging and validating information on behalf of users who do not have time to select for themselves from the total package of internetworked information which faces them. Given the enormity of such a role, one wonders how teacher librarians will have time to undertake this task, and how long before professional information selection agents (either electronic or human) may offer services in this area. McKenzie's

(1996) discussion of Internet information quantity versus quality, concludes that 'pay-for-service is an idea whose time has come'.

MANAGER OF INFORMATION RESOURCES:

Teacher librarians 'provide access to information resources through efficient and well-guided systems for organising, retrieving and circulating resources'.

Organising (cataloguing) and retrieving Internet resources requires teacher librarians to apply the skills of their craft (librarianship) albeit using some different tools. One could debate the relative merits of competency in Dewey and HTML editing, but fundamental concepts such as subject access, structured systems of organisation and user needs continue to apply. Circulation needs special consideration when considering the Internet. The extent of Internet access within the school will influence this issue. Extensive distributed access will usually mean some mechanism has been developed for students to save information to disk (or laptop). If not, printouts or loan diskettes will need to be made available. In a wider sense, circulation could be taken to mean a form of selective dissemination of information, where the teacher librarian circulates web site addresses or messages to staff or students known to have an interest in the subject.

MANAGER OF HUMAN RESOURCES:

McKenzie (1994) talks about the future Media Specialist as Pilot, Information Mediator, IT Manager, and Curator. I would argue that as no role has as yet been deleted from the existing teacher librarian role statement, in most cases someone else needs to take on the IT Manager role for the school. Very few teacher librarians are trained in the hardware, networking and software support domain of Information Technology, and it is rarely possible to take on this role without sacrificing elements of the existing role statement. The Information Services team of the future should include teacher librarians, technical staff, and perhaps information specialists/cataloguers. Technical staff will be involved in researching, obtaining quotes and selecting hardware and software to meet the school's needs, as well as setting up school-specific, subject-specific and user-specific network profiles. Trouble shooting and assisting users with technical problems, maintaining networks, stocks, software updates, passwords, printers, maintenance and repairs will keep these staff busy. Schools intending to publish on the Internet might examine their need for graphic design, presentation and public relations expertise.

REFORMER:

One possible future to consider is that the Internet has the potential to dramatically change the way education is accessed by students in the 0 - 15 year old age bracket. It is difficult to picture the change in community attitudes needed to see a 'School of the Air' style education accepted widely. Visions of our students working on an individualised basis, at home, in the flexible scheduling or attendance modes now available in the post-compulsory sector, raises real questions about socialisation, diversity, employment trends, family and community life. Nevertheless, there is a strong probability that the increased networking of classrooms will result in increased individualisation of education delivery.

As teacher librarians, our profession is founded on a belief in the importance of collaboration, of active and resource-based approaches to learning. Perhaps the major contribution teacher librarians can make in the future is to use the Internet as a tool to show others the value of these approaches. Teacher librarians have the potential to move their students, if not their schools, towards a future which makes the most of opportunities offered by technology, within a context of critical educational change.

REFERENCES

Learning for the future: developing information services in Australian schools. (1993). Carlton, Vic.: Curriculum Corporation.

Eisenberg, M. and Johnson, D. (1996). 'Computer Skills for Information Problem-Solving: Learning and Teaching Technology in Context.' ERIC Digest March 1996. Available WWW: **<gopher://ericir.syr.edu:70/00/Clearinghouses/16houses/CIT/IT_Digests / Computer_Skills>**.

Lupton, P. (1996). Information technology and schools: the training needs of teacher librarians. *Access.* 10(2): 23-26.

McKenzie, J. (1994). 'Libraries of the future.' *From Now On.* Available WWW: **<http://www.pacificrim.net/~mckenzie/libraries.html>**

McKenzie, J. (1996). 'Info-Glut, Info-Garbage and Info-Treasure.' *From Now On.* 5 (6), May. Available WWW: **<http://www.pacificrim.net/~mckenzie/libraries.html>**

Moore, P. (1995). 'Creating the Vision - Learning theory and the curriculum.' Australian School Library Association, 14th Biennial Conference, Fremantle.

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SOME BEGINNING IDEAS

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When I was asked to provide some conversation starters concerning the different ways in which the role of teacher librarians could develop, I was immediately reminded of a statement made many years ago by a Canadian educator named Wilkinson - and, no, my grey cells cannot surface his first name!! He said something like 'libraries exist through no inherent right or cultural axiom. They exist because in the past they have formed an acceptable response to social challenge.' By extension, teacher librarians exist because their role ties them inextricably to acceptable responses to social challenges. We may well wish to argue that Wilkinson's statements reflect a narrow approach to the many reasons for the existence of libraries; I'm proposing, however, that we accept that narrowness and ask ourselves about the nature of social challenges which are before us and to which we may, as professionals, be able to respond. By dwelling in those possibilities for a few moments, we may discover a way to map our preferred professional future.

The Internet is, I believe, one of the social challenges with which we, as professionals, must be involved. Its very presence beckons us to learn and communicate with ideas and people in areas of the world and of thought that we might never have explored before. How can this not affect us? Those people and their thoughts can be a part of our world instantaneously - but not necessarily a part of the world of those with whom we are in daily contact. It was not so very many years ago that our 'knowledge' experiences could be shared with others around us. We could discuss the latest Johnny Carson show or the 6 o'clock news broadcast with our neighbours and our colleagues - and in that discussion, we could debate and analyze what it is we 'all' saw. In our current lives, with our 1000 TV channel capability and our contact with a possible 45 million Internet users, our knowledge experiences are more highly fragmented than ever before. We can now view news coverage 'whenever' - we can 'graze' through the information sources - but, where do we turn for a discussion or interpretation about what we saw?

Not only is there a social challenge concerning fragmentation of our knowledge experiences but there is also a challenge about how we process that knowledge. That challenge has been surfaced by Derrick De Kerckhove in his book, *The Skin of Culture: investigating the new electronic reality*. De Kerckhove, who worked closely with Marshall McLuhan for many years, tells us that with television and computers 'we have moved information processing from within our brains to screens in front of, rather than behind, our brains'. Images from monitors do not compete with books but, in fact, suggest something entirely different than books. They propose, he says, a 'collective imagination' as something we can actually consume but in which we do not directly participate. De Kerckhove illustrates this conclusion through a description of an experiment he was asked to participate in at Simon Fraser University. There, brothers Steven and Robert Kline wired De Kerckhove to a computer and attached various skin-response devices to his forehead, heart, left mid finger and left wrist. He was given a joy stick and ask to indicate whether he liked or didn't like what he saw during 20 minutes of a variety of television images. De Kerckhove was sure, at the end of the experiment, that he had not had enough time to respond to any of the images; the Kline brothers showed him that he had, in fact, responded. De Kerckhove's conclusions were that 'television talks primarily to the body - not the mind' and 'if the video screen has such a direct impact on my nervous system and my emotions and so little effect on my mind, then most of the information processing was actually being performed by the big screen'.

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Put that together with another of De Kerckhove's statements students no longer appear to 'scan' a page of printed text and graphics in the same way we, as adults, do - that is, left to right and top to bottom of the page. Instead they seem to 'throw their eyes' on the pages as if, he says, 'they were transferring their visual strategy from the television screen to the text'. This style of processing information is extremely different from the processing which we, as teacher librarians, tend to use. It leads us to questioning how we can teach scanning the text... notetaking... synthesizing... if the very way in which students read and process information differs that drastically from the way in which we, as adults, read and process information. As I've written and said many times, it appears

as if we have a new twist to 'English as a Second Language' and that is 'Information Processing as a Second Language'.

It seems to me that, with just the preceding small amount of information, there are three social challenges which we, as teacher librarians must meet if we are to fulfil the role of 'acceptable response to social challenge' so concisely scribed by Wilkinson. We are faced with:

1. fragmentation of information experiences;
2. information processing occurring outside of our own brains; and
3. information processing which differs between generations.

With this in mind, I'm proposing a preferred future for teacher librarians in which:

1. teacher librarians learn how our students process information from the variety of information sources available and learn how to assist ourselves, students and educators to become consciously competent in the application of information literacy skills. This is no small feat; there is much research to do in this area and a great deal of learning - fortunately, we are in the profession of life long learning;

2. teacher librarians become comfortable with the new information technologies - so comfortable that we can model information gathering and processing to our staff and students. I cannot put Peter Cochrane's words out of my mind - 'Imagine a school where students can read and write and teachers who cannot and you have a metaphor for the Information Age in which we live' - and I want teacher librarians to play a pivotal role in making sure that Cochrane's metaphor does not continue to have a place in our professional and teaching reality;

3. teacher librarians continue to pay respect to our roots by acknowledging that we have a strong and honourable heritage in the words 'teacher' and 'librarian'. These words presuppose that our purpose is to work with others in the teaching and learning of information literacy processes using whatever sources are available to us - and that information literacy does not mean access only - but that it covers the range involved in 'making meaning' from all the information derived from all the information sources. These words presuppose that we are not mired in the world of print only and that we are not approaching other sources of information with a 'there be dragons' fear in front of us. These words presuppose that use of the Internet, that modern day answer to Pandora's Box, is a use that we value, that we want to learn about and that we want to work with others to learn and teach about. Those two words also presuppose that, in this profession of teacher librarianship, we are continuing the movement away from concentration on physical access to information toward concentration on intellectual access to information - from an isolationist and protectionist library with walls to a curriculum-integrated 'real' and virtual library; and, that

4. teacher librarians continue to work with our audiences to gain an understanding of this view of who and what we are - that is, information literacy specialists who work with others to develop students who are critical and creative problem solvers. This does not negate our role as one of the connectors to great literature - it enhances that role.

How do we get to this preferred future - when in the world of our everyday reality, economic pressures are arguing against our very existence? How do we prevent the probable role - of being non existent - cautioned by writers such as David Jenkinson from the University of Manitoba:

> At any given time within a province, school libraries will be assigned varying degrees of priority and support by the department of education. Even allowing provincial recognition of school library development as an item of paramount importance within its educational program, this favoured position can be meaningless when viewed against the backdrop of the department of education competing with other departments for both status and tax dollars. Additionally, the provincial education authority shares its power with local school boards which, when acting within the parameters of their delegated responsibilities, can strongly influence the development of school libraries.

I believe that there are many ways in which our preferred role can overtake the probable one; for instance, teacher librarians and various other educational partners can continue to:

1. ensure that all audiences understand the contribution teacher librarianship makes to the development of students and, therefore, to societal challenges - we, and others, need to ensure that this is an ongoing conversation in which we engage and that this conversation includes all partners in education. Like it or not, I believe that the conversation must also involve the economic cost to society of NOT developing students who are informationally literate;

2. ensure that a school district-wide 'infrastructure' is in place to protect the integrity of student access to information and the development of informationally literate students; such infrastructure could include adoption of the Association for Teacher Librarianship in Canada's (ATLC) 'Students' Bill of Information Rights'. It should also include such things as policy, staffing regulations, staff development, position descriptions, developmental supervision, appropriate facilities, appropriate resources and appropriate staffing related to what we expect of teaching professionals; and

3. ensure that, as professionals, we are knowledgeable and invitational - that we are learning, we are teaching and we are, always, inviting our partners to be together with us in this.

I do truly believe that we are in a time most perfectly suited to who and what we are as professionals. I am unsure that those who balance budget lines acknowledge this. My belief is that we are able to influence - and that we must influence - because we are not only an acceptable response to some of society's challenges - we are the perfect response!!!

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FUTURE INFORMATION PROFESSIONALS: A PERSON FOR ALL REASONS?

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ABSTRACT

This paper reports an as yet unfinished Delphi investigation of information management futures. Too often the personal aspect of information provision is overlooked in the light of the dramatic development of technology. However, behind every technological advance there is a provider whose role it is to source, organise and disseminate the information gleaned via that technology.

While the answer to this problem will be different for everyone, some considerations are becoming increasingly important. Each has significance as we move forward. Clearly Internet is now an important medium and information management needs to include this device. Online data is increasingly providing an economical means of accessing large quantities of data though not necessarily such as is precisely what our individual clients require.

Perhaps the answer lies in two directions, both needing consideration. On the one hand we need reliable equipment and perhaps a new generation of electronic data technicians to make that equipment and its networking reliable. Secondly we need sound software support that allows integration of data into Internet useable formats, incorporates the net itself, communicates readily yet is able to be catalogued, refined and maintained in a client based easily managed way.

Keywords: artificial intelligence, information management, Delphi.

INTRODUCTION

One problem that besets the modern investigator of the information field is that of definition. What's in a name? someone once asked. But there is an important issue here. Terminology can sometimes obstruct the view and sideline effective consideration of this important issue. In the educational context one often hears of teacher librarians (TLs) or media specialists. In the more open field of business one can occasionally refer to Information Manager or Data Manager in much the same context. For the purposes of this paper I am perhaps trying to be all things to all people (a very uncomfortable position I believe) and refer to a person whose primary task it is to collect, catalogue and disseminate effectively information from many sources to users with many needs. I will attempt to most usually refer to such a person as Information Manager, more as a means of finding common ground than as a specific statement of vocational nomenclature.

The field of information provision is a changing one. Canadian TL Lucinda Lockwood put it rather succinctly just recently:

> WHO'S STRESSED!!??? Ha ha:>). Seriously now, it used to be (in the 'good ol' days') that once a librarian knew the system (Lib. of Congress or Dewey and Sears) and the process, she had it made. Things were static, and new acquisitions required no further skills to employ them. Now, librarians have to do all of the traditional stuff, and learn new information technology, too! PLUS: she has to do her own trouble shooting; teach the patrons how to use the information (she didn't have to teach patrons how to use a book!); lobby for more money to buy more technology, as well as for traditional, print resources; apply for grants for more money . . . ; then there's advocacy, wherein she has to justify her role as a professional in the school. Stress is the word for it!

For many years her outline, though highly simplistic, was fairly accurate. Life for the information provider was simple and straight forward. The 1990s have changed all that. Today we live in an

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information rich world. One only has to wander around the endless tracks of the World Wide Web to be convinced that we live with a virtual information overload.

Oh what a tangled web we weave, when first we practice to perceive.

WINTER

Winter chills bring winter ills (or to quote a fellow professional, 'If you lot don't shut up you can get out of the nice warm library!').

For the present specialist the task can seem enormous. Jamie Mackenzie (1995), in his electronic article, *Libraries of the Future*, summed up a modern library mission in the following way:

> The mission of the library media program is to ensure that students and staff are effective users of ideas and information.
>
> 1. Provide intellectual access to information
> 2. Provide physical access to information
> 3. Provide learning experiences that encourage users to become discriminating consumers and skilled creators of information
> 4. Provide leadership, instruction, and consulting assistance in the use of instructional and information technology
> 5. Provide resources and activities that contribute to lifelong learning
> 6. Provide a facility that functions as the information center of the school
> 7. Provide resources and learning activities that represent diversity.

The task is large and in the winter of our days can seem beyond us. New forms of data provision can at first glance seem to meet all our dreams, but in the cold light of installing the newest CDROM (not compatible with our existing computers), or finding that one elusive piece of information during a fruitless all-night session on the Net, the trees can indeed seem bare.

One further consideration deserves mention. The often quite considerable gap between administrative expectations and their actual financial contributions. Blow out in information supply, largely due to the advent of the information superhighway, has caused a massive shortfall in data provision at an institutional level. Faced with a super highway, most institutional drivers are equipped only with Mini Minors! Modern educational establishments not only need heavy-hauling semi-trailers to travel this highway but they also need some means of sifting through all the goodies these trucks can bring home. Too frequently, institutional administrators, very well used to the old days continue to provide only the finance for the mini's but expect the delivery of a Kenworth!

> I see the information specialist as a broker of sorts. With the volume of information readily available increasing rapidly, the individual information consumer will need an increasing amount of assistance to locate, evaluate and synthesise the information he/she needs. If schools shift from a content delivery to a generative curriculum model (as the vast supply of information allows), the information specialist will play a critical role in helping to design and implement the curriculum.
>
> (Hird 1996)

The boom in information urgently needs to have similarly 'boomed' finance in order to provide the means and the processing necessary to capitalise on new information sources and the wealth of information available.

Now is the winter of our discontent.

SPRING

New life springs from the cold earth, the information professional feels the first stirring's of a new era - a new day of excitement dawns.

Knowledge is power, so they say, and the information managers of the future are certainly going to be responsible for a lot more information than have been their forebears. In this regard, they will become information princes, ruling their kingdoms by day and, increasingly in the future, by night also. Information is already becoming a 24 hour-a-day matter.

Leadership is required - leadership in collaboration; leadership in the use of new media; knowledge of sources of information and their characteristics (Haycock 1996). A new day dawns bright an fair. Dewdrops of knowledge bedeck our starry-eyed students as they rush to their ever-loving professionals for pearls of wisdom from the Internet.

One problem facing your information prince though are the difficulty controlling his or her subjects.

Just when the kingdom is running along smoothly and all the kings men are happily smiling at their computer screens full of information, some laterally thinking, non-intellectually challenged individual will be certain to invent some new piece of software or demand some information not currently available and thus throw the whole realm into a ferment. In our current information world one of these subjects upgrading his software on a more or less annual basis is alone sufficient to keep the realm in something resembling constant turmoil. Your information prince then, becomes monarch of all he surveys - a constantly changing and challenging anarchy.

SUMMER

'Tis High Summer and the heat is ON!

In this state of anarchy, the information professional of the future may indeed become something of a Poohbah. Like the devils of the New Testament - their tasks may become LEGION. One way of challenging this state of anarchy is to become Lord High Executioner - off with their heads! However, the problem will remain. Information will continue to be needed. The number of clients will grow, the number of tasks will grow, the number of information sources will grow, the need to check and keep checking each of these sources will grow.

The problems of information provision are even more serious for the educational field where money is less available and yet the need for information is equally as critical. In the school situation the modern provider is facing increasing pressure to be all things to all people, even if they are not trained to be or find it impossible to be.

> Give me a technician or give me death! Our school is packed to the rafters with computers and related technology. Many teachers are good trouble shooters, but our knowledge only goes so far. That's where a specialist must come in. My library clerk knows less about computers than any other staff member in the school, and the library has the greatest number of different applications! How can this happen?!! I love information technology, but glitches such as inadequate technical support will hold us back.
>
> (Lockwood 1996)

In the past, information providers trained to accession material, enter it into a catalogue and then guide users to that catalogue have predominated in the field. In the more recent past, many of these same people have needed to become familiar first with increasingly complex computer catalogue software, then with CD ROMs, then with networks to integrate the two, and finally with Internet and a host of online services. To add to the troubles some face is the penchant for upgrading software at the rate of new versions almost annually. If you run 2 programs, upgrade each and put in place new licences for same, install them on a network of 20 computers, fine. But what happens if you run Windows NT, Win95, a library software utilising MS Access and Sequel Server, Office 95

and MS Works for client work stations, Corel Draw 6, EBSCO Magazine data bases, Internet access and Email as well as a dozen or more CD Rom titles and 50 plus user orientated educational softwares?

Success at this either leads to something approaching Poohbah status or a prolonged holiday in a specially equipped rest home where they hand out those lovely white canvas tee shirts with the especially long sleeves that do up at the back!

AUTUMN

'That season of mellow fruitfulness.'

The problems of winter, the promise of spring, the heat of the summer, all give way to a feeling of optimism and mellowness. All IS well with our souls, we are going to cope with the future, and a bright one it is.

One of the more important issues facing information personnel today is their ability to predict what is likely to be needed in the future by their clients and how such information is to be first acquired and later distributed.

In this regard the information manager of the future will have to be something of a prophet.

Here are some predictions:

- *2 years from now*
  High speed broad-band Internet access producing real time movies and live camera action and video-conferencing.

- *4 years from now*
  Early forms of so-called 'intelligent agents' are already in use and it is possible to imagine an 'intelligent agents kit' assembled to order by the librarian in order to create a body of knowledge for a specific purpose and keep it updated. This would involve sampling online-resources at intervals but would need supervision by an information expert. Such software might not quite be new technology but would support the work of information experts.

- *10 years from now*
  Virtual Reality - virtual trips to inaccessible places with some semblance of reality.
  Development of communications globally leading to immediate access and exchange with partners in other classrooms with different experiences and languages. Access to expertise and experience via realistic 'avatars'.

If any or all of these or any other possibilities are to eventuate, it behoves the information manager of the present and even more importantly, of the future, to be in the box seat, prepared for the contingency, forewarned and fore armed.

ONE SOLUTION

All that glitters is not gold,
Often have you heard it told,
But the intrinsic value of the Net
Can be a darling, can be a pet.

The movement towards a High-tech future in libraries is going to effect in definite ways the physical plant involved in providing educational information to clients. Already we are seeing two moves of some significance. On the one hand, there are a growing number of establishments being built which do not include a formal library or information centre. Rather, information is provided within

teaching areas on the basis of being thus nearest and most convenient for users. Information provided in this way is obtained on-line from sources outside the physical establishment.

This raises the issue of control. To what extent is teaching going to be interrupted or adversely effected by access to unrestricted data - information that is not previously selected, tailored and designed for specific needs within a particular institution? In this scenario, where does the role of teacher librarian exist? As an extra class teacher, as a roving specialist or as a member of a new curriculum entity, a new school department - information literacy?

The second move being seen currently is that trend towards Distance Education. While this has many desirable advantages, especially for the isolated students whose geographical location make any alternative very difficult, there is non-the-less some distinct disadvantage for a student's education where active interchange with teachers and other students does not take place. Advances in technology are allowing more and more intercommunication and there are those (Imagine 3 software developer, John Devine, for example) who are seeing a virtual reality situation where no student physically attends a school and where no teacher does so either. In this futuristic scenario, the implications for interpersonal relationships would need to be totally reconsidered.

What is perhaps needed today more than at any other time of our information history is access to the wealth of data available through a single interface and allowing a range of search formats from the relatively simple ones needed for our children through to the complex ones required by industrial researchers and businesses.

Such a package would need to support Internet fully and integrate with it. It would also need to be supported by sound knowledge and on-site technical help in terms of networking, etc. This could become a joint venture with several organisations, too small to allow budget for one person, sharing a technician.

Possibly this is the key. Costs involved in data provision are rising to unprecedented levels. Unless there is a growth in shared resources, data is quickly going to become too expensive for smaller establishments whether educational or business. We may see considerably more of the 'haves' and 'have nots' problem, or we may see a new era of shared resources and co-operation. In the future, will we be driving Kenworth's or Mini's??

REFERENCES

Haycock, K. (1996). Email discussion, Delphi Round 1 10.4.96

Hird. (1996). Email discussion, Delphi Round 1 9.04.96

Lockwood, L. (1996). Email discussion, Delphi Round 1 9.04.96

McKenzie, J. (1995) Libraries of the future. *From Now On*, electronic journal at **<http://www.pacificrim.net/mckenzie/ libraries.html>**, visited 9.11.95

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